## **AUTHOR INDEX**

ABBAS, S. A., 77 ABBATE, S., 1 ANDERSON, C. B., 276 ANGEL, A.-S., 27 ATALLA, R. H., 1

BAER, H. H., 151
BAJO, G., 1
BAKØY, O. E., 183
BAYONOVE, C., 139
BENFENATI, E., 67
BEZUKLADNIKOV, P. W., 268
BITTEUR, S., 139
BOOS, W., 113
BRILLOUET, J.-M., 139

CADMUS, M. C., 203
CANDIANO, G., 67
CASU, B., 292
CHAVANTE, S. F., 292
CONTI, G., 1
CORDONNIER, R., 139
CURRIE, F., 279
CZERNECKI, S., 121

DAVIES, D. B., 39 DELLACHERIE, E., 193 DIETRICH, C. P., 292

ELYAKOVA, L. A., 268

FARKAS, V., 213 FERREIRA, T. M. P. C., 292 FRANZ, G., 285 FRENKIEL, T. A., 39

GHIGGERI, G. M., 67 GOUX, W. J., 47 GRASDALEN, H., 183 GUNATA, Z., 139 GUSMANO, R., 67

HASEGAWA, A., c1 HENSEL, A., 285 HERNÁNDEZ MATEO, F., 151 HORTON, D., 221, 231

ICARDI, G., 67 ISHIDA, H., C1

JACKSON, L. K., 203 JONES, C., 279 Kanazawa, S., 271 Kenne, L., 288 Kieboom, A. P. G., 163 Kiso, M., c1 Klett-Zygmunt, D., 193 Kogan, G., 171 Koll, P., 247 Koyac, P., 87 Krotkiewski, H., 27

LARSEN, B., 183 LEHMANN, J., 113 LERNER, L., 87 LERNER, L. M., 250 LINDBERG, B., 288 LIPTÁK, A., C5 LISOWSKA, E., 27

MACLACHLAN, G., 213
MASLER, L., 171
MATTA, K. L., 77
MIYAKE, T., 221
MOCZULSKA, A., 262
MULLOY, B., 39
MURASE, T., C1

NADER, H. B., 292 NIEMELÄ, K., 131 NILSSON, B., 27 NOBLE, O., 236

OGAWA, S., 271

PAPERT, G., 247 PAVLIAK, V., 171 PEGRAM, J. J., 276 PIZZINI, S., 1 POHL, S., 247 PRIEBE, W., 231

REUBEN, J., 244 RUTHERFORD, W. M., 203

SAAK, W., 247 SACCO, D., 193 SANDULA, J., 171 SCHMIDT, R. R., 254 SERIANNI, A. S., 13 SLODKI, M. E., 203 SMIATACZ, Z., 262 SNYDER, J. R., 13 STECK, J., 113

Carried.

Straathof, A. J. J., 163 Szabó, L., c5 Sznaidman, M., 231

TADANO, K., 271 TARAVEL, F. R., 236 THOMAS, R. L., 77 TOMA, L., 292 TORRI, G., 292 VALERY, J.-M., 121 VAN BEKKUM, H., 163 VROLIJK, J. M., 163

WEGMANN, B., 254 WEISER, W., 113 WEISLEDER, D., 203 WRISSENBERG, S., 113

YAMADA, H., 271

ZETTA, L., 67

## SUBJECT INDEX

- Acetal formation from a pyruvyl thioacetal, catalyzed by methyl triflate, dimethyl(methylthio)sulfonium triflate, or nitroso tetrafluoroborate, pyruvic, c5
- N-Acetyl-N-p-chlorophenyl-β-D-ribopyranosylamine derivatives, nucleophilic displacement reactions of some, 262
- Adenosine, 5'-deoxy-, synthesis by coupling methods of, 250
- Adriamycin, conversion of daunorubicin into, 231
- Alkenes, C-(D-glucopyranosyl)-, synthesis, 221 β-L-Altropyranose, 6-deoxy-6-(dimethylphenylsilyl)-1,2:3,4-di-O-isopropylidene, synthesis
- of, via hydrosilation, and its reactivity, 276 2-Amino-2-deoxy-D-glucose, the reaction of lysine with, 67
- α-Aminonitriles related to lincosamine, stereochemical studies of the synthesis of, 121
- 3,7-Anhydro-2-azi-1,2-dideoxy-D-glycero-D-gulo-octitol, synthesis of malto-oligosaccharide homologues of, for use as photoaffinity reagents, 113
- 1,6-Anhydro-β-D-glucopyranose, kinetics and mechanism of the acid catalysed butanolysis of, 163
- 2,6-Anhydro-D-mannononitrile, X-ray structure of 3,4,5-tri-O-acetyl-, 247
- Anomerization, of furanose rings, 13
- Anthracyclines: synthesis of derivatives of 3amino-3,4,6-trideoxy-L-lyxo- and -L-xylo-hexose, and attempts at fluorination at C-2, carbohydrate components for modified, 151
- α-D-Arabinopyranosyl cyanide, X-ray structure of 2,3,4-tri-O-acetyl-, 247
- Assessment of the values of the C-H-stretching force constants in sugar molecules, 1
- Borate-guar D-galacto-D-mannan complex, thermodynamic data of, 236
- Butanolysis of 1,6-anhydro-β-D-glucopyranose, kinetics and mechanism of the acid-catalysed, 163
- Candida krusei, novel structure of the cellular mannan of the pathogenic yeast, 171
- Carbohydrate components for modified anthracyclines: synthesis of derivatives of 3-amino-3,4,6-trideoxy-L-lyxo- and -L-xylo-hexose, and attempts at fluorination at C-2, 151
- Carbon resonances of peracetylated derivatives, the determination of complex carbohydrate structure by using carbonyl, 47

- Cell walls of regenerating tobacco protoplasts, a (1→3,4)-linked β-D-glucan from the, 285
- Conformational studies of oligosaccharides, application of long-range carbon-proton coupling constants to, 39
- Daunorubicin, conversion into adriamycin and 14-O-acetyldoxorubicin, 231
- Degree of esterification and the distribution of methylated and free carboxyl groups in pectins, determination by n.m.r. spectroscopy, 183
- 5'-Deoxyadenosine, synthesis by coupling methods of, 250
- 6-Deoxy-6-(dimethylphenylsilyl)-1,2:3,4-di-Oisopropylidene-β-L-altropyranose: synthesis via hydrosilation, and reactivity, 276
- Determination of complex carbohydrate structure by using carbonyl carbon resonances of peracetylated derivatives, 47
- Determination of the degree of esterification and the distribution of methylated and free carboxyl groups in pectins by <sup>1</sup>H-n.m.r. spectroscopy, 183
- Dextran, evidence for the formation of different types of phosphate moieties in the phosphorylation with polyphosphoric acid of, 193
- Doxorubicin, 14-O-acetyl-, conversion of daunorubicin into, 231
- Effects of methyl, ethyl, and carboxymethyl Osubstitution on the anomeric equilibrium of Dglucopyranose, 244
- Enzymic hydrolysis of potentially aromatic glycosides from grape, sequential, 139
- Enzymic hydrolysis of rhizobial 4-O-methyl-Dglucurono-L-rhamnan, 203
- Evolution; chemical and enzymic degradation, and <sup>13</sup>C-n.m.r. spectral evidence of the maintenance of heparan sulfate structure throughout, 292
- Facile regio- and stereo-selective synthesis of αglycosides of N-acetylneuraminic acid, C1
- Fluorination at C-2 of carbohydrate components for modified anthracyclines: synthesis of derivatives of 3-amino-3,4,6-trideoxy-L-lyxoand -L-xylo hexose, and attempts at, 151
- 4-Fluoro derivative of uridine 5'-(2-acetamido-2deoxy-α-D-galactopyranosyl) diphosphate, synthesis of, 77
- 6-Fluoro derivative of uridine 5'-(2-acetamido-2,6-deoxy-a-n-glucopyranosyl) diphosphate synthesis of, 77

2-O-α-L-Fucopyranosyl-D-galactose (H-disaccharide), synthesis of, via the trichloroacetimidate method, 254

Furanose-ring anomerization: a kinetic study of the 5-deoxypentoses and 5-O-methylpentoses, 13

D-Galacto-D-mannan (guar)-borate complex, thermodynamic data of, 236

β-D-Glucan from the cell walls of regenerating tobacco protoplasts, a (1→3,4)-linked, 285

1,4-β-Glucanase, pea, stimulation of activity of, by oligosaccharides derived from xyloglucan, 213

D-Gluco-oligosaccharides, preparation by transglycosylation of <sup>14</sup>C-labelled (1→3)-β-, 268

D-Glucopyranose, anomeric equilibrium of, effects of methyl, ethyl, and carboxymethyl Osubstitution on the, 244

C-(D-Glucopyranosyl)alkenes, synthesis of, 221

D-Glucose, synthesis of (1S,3R,4R,5R)-3,4-(isopropylidenedioxy)-1-[(1R)-1,2-(isopropylidenedioxy)ethyl]-2-oxaspiro[4.4]non-6-en-8one from, 271

Glycophorins, structural analysis by f.a.b.-m.s. of the mixture of alditols derived from the Olinked oligosaccharides of murine, 27

Grape, sequential enzymic hydrolysis of potentially aromatic glycosides from, 139

Guar D-galacto-D-mannan-borate complex, thermodynamic data of, 236

Heparan sulfate structure throughout evolution; chemical and enzymic degradation, and <sup>13</sup>Cn.m.r.-spectral evidence of the maintenance of, 292

2-Hydroxy-2-cyclopenten-1-ones, formation of, from polysaccharides during kraft pulping of pine wood, 131

Isomalto-oligosaccharides, methyl α-glycosides of, and related compounds, systematic chemical synthesis and n.m.r. spectra of, 87

(Isopropylidenedioxy)-1-[(1R)-1,2-(isopropylidenedioxy)ethyl]-2-oxaspiro[4.4]non-6-en-8-one from D-glucose, synthesis of (1S,3R,4R, 5R)-3.4-, 271

Kinetics and mechanism of the acid-catalysed butanolysis of 1,6-anhydro-β-D-glucopyranose, 163

kraft pulping of pine wood, the formation of 2hydroxy-2-cyclopenten-1-ones from polysaccharides during, 131

Lincosamine, stereochemical studies of the synthesis of α-aminonitriles related to, 121 Long-range carbon-proton coupling constants: application to conformational studies of oligosaccharides, 39

Lysine, the reaction of 2-amino-2-deoxy-Dglucose with, 67

Maintenance of heparan sulfate structure throughout evolution. Chemical and enzymic degradation, and <sup>13</sup>C-n.m.r.-spectral evidence, 292

Malto-oligosaccharide homologues of 3,7anhydro-2-azi-1,2-dideoxy-D-glycero-D-gulooctitol, synthesis of, for use as photoaffinity reagents, 113

Mannan of the pathogenic yeast Candida krusei, novel structure of the cellular, 171

Mass spectrometry of the mixture of alditols derived from the O-linked oligosaccharides of murine glycophorins, structural analysis by f.a.b., 27

Neuraminic acid, N-acetyl-, a facile regio- and stereo-selective synthesis of  $\alpha$ -glycosides of, c1

Novel structure of the cellular mannan of the pathogenic yeast Candida krusei, 171

Nucleophilic displacement reactions of some Nacetyl-N-p-chlorophenyl-β-D-ribopyranosylamine derivatives, 262

Oligosaccharides, application of long-range carbon-proton coupling constants to conformational studies of, 39

Pectins, determination by n.m.r. spectroscopy of the degree of esterification and the distribution of methylated and free carboxyl groups in, 183

(E)-1,3-Pentadiene, 5-(2,3,4,6-tetra-O-acetyl-α-D-glucopyranosyl)-, synthesis of, 221

Pentoses, 5-deoxy-, a kinetic study of the anomerization of the, 13

Pentoses, 5-O-methyl-, a kinetic study of the anomerization of the, 13

Peracetylated derivatives, the determination of complex carbohydrate structure by using carbonyl carbon resonances of, 47

Phosphorylation of dextran with polyphosphoric acid, evidence for the formation of different types of phosphate moieties during the, 193

Photoaffinity labels for malto-oligosaccharide binding sites, synthesis of malto-oligosaccharide derivatives of 3,7-anhydro-2-azi-1,2-dideoxy-D-glycero-D-gulo-octitol as, 113

Pneumococcal polysaccharide S4, a structural re-assessment of the, 279

- Polysaccharide, a re-examination of the structure of the *Streptococcus pneumoniae* type 29, 288
- Polysaccharide S4, a structural re-assessment of the pneumococcal, 279
- Polysaccharides, the formation of 2-hydroxy-2cyclopenten-1-ones from, during kraft pulping of pine wood, 131
- Preparation of <sup>14</sup>C-labelled (1→3)-β-D-glucooligosaccharides by transglycosylation, 268
- 1-Propene 3-(2,3,4,6-tetra-O-acetyl-α-D-glucopyranosyl)-, synthesis of, 221
- Pyruvic acetal formation from a pyruvyl thioacetal, catalyzed by methyl triflate, dimethyl(methylthio)sulfonium triflate, or nitroso tetrafluoroborate, c5
- Reaction of 2-amino-2-deoxy-D-glucose and lysine: isolation and characterization of 2,5bis(tetrahydroxybutyl)pyrazine, 67
- Re-investigation of the phosphorylation of dextran with polyphosphoric acid: evidence for the formation of different types of phosphate moieties, 193
- L-Rhamnan, 4-O-methyl-D-glucurono-, rhizobial, enzymic hydrolysis of, 203
- D-Ribopyranosylamine derivatives, nucleophilic displacement reactions of some N-acetyl-N-pchlorophenyl-β-, 262
- D-Ribose, 5-deoxy-, synthesis of 5'deoxyadenosine from, 250
- Sequential enzymic hydrolysis of potentially aromatic glycosides from grape, 139
- Stereochemical studies of the synthesis of αaminonitriles related to lincosamine, 121
- Stimulation of pea 1,4-β-glucanase activity by oligosaccharides derived from xyloglucan, 213
- Streptococcus pneumoniae type 29 polysaccharide, a re-examination of the structure of the, 288
- Stretching force constants in sugar molecules, assessment of the values of the C-H, 1
- Structural analysis by f.a.b.—m.s. of the mixture of alditols derived from the O-linked oligo-saccharides of murine glycophorins, 27

- Structural re-assessment of the pneumococcal polysaccharide S4, 279
- Structure of the Streptococcus pneumoniae type 29 polysaccharide, a re-examination of the, 288
- O-Substitution, by ethyl, methyl, and carboxymethyl groups, effect of, on the anomeric equilibrium of D-glucopyranose, 244
- Sugar molecules, assessment of the values of the C-H-stretching force constants in, 1
- Synthesis of (1S,3R,4R,5R)-3,4-(isopropylidenedioxy)-1-[(1R)-1,2-(isopropylidenedioxy)ethyl]-2-oxaspiro[4.4]non-6-en-8-one from Dglucose, 271
- Synthesis of the H-disaccharide (2-O-α-Lfucopyranosyl-p-galactose), via the trichloroacetimidate method, 254
- Systematic chemical synthesis and n.m.r. spectra of methyl α-glycosides of isomalto-oligosaccharides and related compounds, 87
- Thioacetal, catalyzed by methyl triflate, dimethyl(methylthio)sulfonium triflate, or nitroso tetrafluoroborate, pyruvic acetal formation from a pyruvyl, c5
- Tobacco protoplasts, a (1→3,4)-linked β-D-glucan from the cell walls of regenerating, 285
- Transglycosylation, preparation of <sup>14</sup>C-labelled (1→3)-β-D-gluco-oligosaccharides by, 268
- Trichloroacetimidate method, synthesis of the H-disaccharide (2-O-α-L-fucopyranosyl-Dgalactose) via the, 254
- Uridine 5'-(2-acetamido-2,4-dideoxy-4-fluoro-α-D-galactopyranosyl) diphosphate, synthesis of, 77
- Uridine 5'-(2-acetamido-2,6-dideoxy-6-fluoro-α-D-glucopyranosyl) diphosphate, synthesis of,
- X-ray structure of 3,4,5-tri-O-acetyl-2,6anhydro-D-mannononitrile (2,3,4-tri-Oacetyl-O-D-arabinopyranosyl cyanide), 247
- Xyloglucan, oligosaccharides derived from, stimulation of pea 1,4-β-glucanase activity by, 213